

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE BEFORE
THE BOARD OF PATENT APPEALS AND INTERFERENCES**

In re application of:	Warburton)	
)	
Serial No.:	10/668,537)	
)	
Filed:	September 23, 2003)	
)	Art Unit
For:	X-RAY DEVICE COMPONENT WITH)	
	EMISSIVE INORGANIC COATING)	1775
)	
Examiner:	Elizabeth D. Ivey)	
)	

The Honorable Commissioner of Patents and Trademarks
Washington, D.C. 20231

BRIEF OF APPELLANT

This is an appeal to the Board of Patent Appeals and Interferences (the “Board”) from the Final Office Action mailed March 13, 2006 (the “Final Office Action”) wherein the Examiner rejected claims 1-36. This Brief is being filed pursuant to the provisions of 37 C.F.R. § 41.37. This Brief is accompanied by the requisite fee of \$500.00, as provided by 37 C.F.R. § 41.20(b)(2). The Commissioner is hereby authorized to charge any additional fees associated with this communication, or to credit any overpayment, to Deposit Account No. 23-3178.

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LIST OF REFERENCES

U.S. Patent Documents

U.S. Patent No. 3,400,882 to *McManus*

U.S. Patent No. 6,329,098 to *Bliesner*

U.S. Patent No. 5,725,808 to *Tormey et al.*

I. REAL PARTY IN INTEREST

The real party in interest comprises VARIAN MEDICAL SYSTEMS TECHNOLOGIES, INC., by way of assignment from the named inventor, Don L. Warburton, who is captioned in the present application. The corresponding assignment document was recorded in the United States Patent and Trademark Office at Reel/Frame 014545/0188 on September 23, 2003.

II. RELATED APPEALS AND INTERFERENCES

None.

III. STATUS OF CLAIMS

Claims 1-36 are pending in this application. Claims 1-36 were rejected in the Final Office Action mailed March 13, 2006.

IV. STATUS OF AMENDMENTS

The Appellant has not submitted any amendments subsequent to the Final Rejection.

V. SUMMARY OF INVENTION

Exemplary embodiments of the present invention are generally concerned with x-ray device components that include a high emissivity inorganically bonded ceramic coating that can be applied with minimal surface preparation and that provides good resistance to corrosion and oxidation of substrates in high temperature, vacuum environments.

In one example of such an x-ray device component, a vacuum enclosure 300 is provided that includes a can 302 attached to a housing 304. One or more of the inner and outer surfaces 302A/302B of the can 302, and/or the inner and outer surfaces 304A/304B of the housing 304, are coated with an emissive inorganic coating 400 (specification at paragraphs [0047] – [0048]; Figure 3). In this example, the coating 400 comprises a highly emissive, inorganically bonded ceramic slurry incorporating oxide filler elements, with no volatile organic compound (“VOC”) emissions (specification at paragraph [0050]). Among other properties, the coating 400 has good dielectric properties, is stable in the high temperature, vacuum environment characteristic of x-ray devices, and provides effective and reliable performance over a wide range of operating temperatures (Id).

VI. ISSUES

- Issue 1: Whether claims 1-36 are unpatentable under 35 U.S.C. §112, first paragraph, as failing to comply with the enablement requirement.
- Issue 2: Whether claims 1-2, 4-15 and 17-19 are unpatentable under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 3,400,882 to McManus (hereinafter “*McManus*”).
- Issue 3: Whether claims 1-2 and 4-10 are unpatentable under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 6,329,098 to Bliesner (hereinafter “*Bliesner*”).
- Issue 4: Whether claims 1-2, 4-15 and 17-19 are unpatentable, under 35 U.S.C. §103(a), over *McManus*.
- Issue 5: Whether claims 1-2 and 4-10 are unpatentable, under 35 U.S.C. §103(a), over *Bliesner*.
- Issue 6: Whether claims 3, 16 and 20-26 are unpatentable, under 35 U.S.C. §103(a), over *McManus* as applied to claims 1-2, 4-15 and 17-19, and further in view of U.S. Patent No. 5,725,808 to Tormey et al. (hereinafter “*Tormey*”).
- Issue 7: Whether claim 3 is unpatentable, under 35 U.S.C. §103(a), over *Bliesner* as applied to claims 1-2, and further in view of *Tormey*.

VII. ARGUMENTS

- A. **Issue 1:** Whether claims 1-36 are unpatentable under 35 U.S.C. §112, first paragraph, as failing to comply with the enablement requirement.

1. The Examiner has failed to properly state, and apply, the established legal standard concerning rejections under 35 U.S.C. § 112, first paragraph, to support the allegation that claims 1-36 are not enabled.

With regard to claims 1-36, the Examiner has asserted that:

Claims 1-36 stand rejected under 35 U.S.C. 112, first paragraph as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.”

Final Office Action at paragraph 2 (emphasis added).

This rejection is problematic for a variety of reasons. At the outset, and as noted in both Applicant’s paper filed on February 21, 2006 (“Applicant’s February 21, 2006 Paper”) and Applicant’s Pre-Appeal Brief Request for Review, the test for enablement is not, contrary to the repeated assertions of the Examiner, simply whether the claimed invention “was described sufficiently in the specification to enable one skilled in the art to make and use the invention.” *Applicant’s February 21, 2006 Paper* at 10; and, *Applicant’s Pre-Appeal Brief Request for Review* at 2-3. Rather, it is well established that “The standard for determining whether the specification meets the enablement requirement was cast in the Supreme Court decision of *Mineral Separation v. Hyde*, 242 U.S. 261, 270 (1916) which postured the question: is the experimentation needed to practice the invention undue or unreasonable? That standard is still the one to be applied.” *In Re Wands*, 858 F.2d 731, 737, 8 USPQ2d 1400, 1404 (Fed. Cir. 1988).” *MPEP § 2164.01. Emphasis added.* In light of the foregoing, Applicant respectfully submits that it is clear that the standard upon which the rejection (articulated by the Examiner in the Office Action mailed February 4, 2005, the Office Action mailed August 19, 2005, and again in the Final Office Action) is based is plainly inconsistent with longstanding U.S. Supreme Court and Federal Circuit precedent.

With respect to the enablement test established by the aforementioned precedent, Applicant has noted in Applicant's February 21, 2006 Paper at 10-11, and in Applicant's Pre-Appeal Brief Request for Review at 2-3, that the examination guidelines provide that "there are many factors to be considered when determining whether there is sufficient evidence to support a determination that a disclosure does not satisfy the enablement requirement and whether any experimentation is 'undue.' MPEP § 2164.01(a). *Emphasis added.* See also, Applicant's February 21, 2006 Paper at 10 (setting forth a non-exhaustive list of factors to be considered). The examination guidelines further provide that "It is improper to conclude that a disclosure is not enabling based on an analysis of only one of the above factors while ignoring one or more of the others. The examiner's analysis must consider all the evidence related to each of these factors, and any conclusion of nonenablement must be based on the evidence as a whole. *Id.* *Emphasis added.* As to the aforementioned factors, the examination guidelines explain that "The determination that 'undue experimentation' would have been needed to make and use the claimed invention is not a single, simple factual determination. Rather, it is a conclusion reached by weighing all the above noted factual considerations." *Id.* *Emphasis added.* Applicant respectfully submits that it is clear from the Final Office Action, and from the Office Action mailed August 19, 2005 as well, that there is no evidence whatsoever in the record that the Examiner has performed the required analyses.

As the foregoing makes clear, the Examiner has not only failed to properly state the test for enablement, but the Examiner has likewise failed to address the matter of undue experimentation as such is contemplated by the established test for enablement.

Moreover, while Applicant pointed out these deficiencies to the Examiner in Applicant's February 21, 2006 Paper at 10-11, the Final Office Action nonetheless failed to address the arguments set forth Applicant's February 21, 2006 Paper, but instead simply repeated the earlier rejection, again incorrectly stating the enablement test (*Final Office Action* at 2-3). Such an approach to examination is clearly inconsistent with the examination guidelines. Particularly, Applicant notes that "[w]here the applicant traverses any rejection, the examiner should, if he or she repeats the rejection, take note of the applicant's argument and answer the substance of it." M.P.E.P. § 707.07(f). *Emphasis added.*

Finally, Applicant noted in the aforementioned traversal that the enablement rejection of claims 1-36 appeared to be based at least in part on the personal knowledge of the Examiner,

inasmuch as the support for the rejection advanced by the Examiner was nothing more than conclusory statements that claims 1-36 were not enabled, and Applicant accordingly requested an affidavit pursuant to 37 C.F.R. 1.104(d)(2). See *Applicant's February 21, 2006 Paper* at 11. However, the Examiner did not provide the requested affidavit.

In sum, the Examiner has repeatedly failed to properly state the test for enablement. In addition, there is no evidence in the record that indicates that the Examiner has ever performed any of the analyses required in connection with application of the enablement test as such test has been articulated in Supreme Court and Federal Circuit precedent. Further, although these deficiencies were identified by the Applicant to the Examiner, the Examiner acted in contravention of the examination guidelines by failing to address Applicant's arguments or the deficiencies. Finally, Applicant noted that the sole support adduced for the rejection was the conclusory statement of the Examiner that claims 1-36 were not enabled, and Applicant accordingly requested an affidavit pursuant to 37 C.F.R. 1.104(d)(2). However, the Examiner failed to provide the requested affidavit.

For at least the foregoing reasons, Applicant respectfully submits that the rejection of claims 1-36 under 35 U.S.C. § 112, first paragraph, lacks an adequate basis and should accordingly be overruled by the Board.

2. The Examiner has failed to establish that the scientific and other explanatory language in the specification is inadequate to enable one of ordinary skill in the art to make and use the invention without undue experimentation.

In the rejection of claims 1-36, the Examiner has further asserted that:

The only example of the coating material is referred to trade names on paragraphs [0054] – [0055], was the trademark or tradename “HPC/H02” and “HPC/H05”, which was not defined in the specification. Accordingly, identification by scientific or other explanatory language is necessary in order to enable one skilled in the art to make and/or use the invention.

Final Office Action at 2. Emphasis added.

At the outset, Applicant notes that part II. of Applicant's February 21, 2006 Paper indicates that the specification also refers to the mark HIPERCOAT® and the specification does not refer only to “HPC/H02” and “HPC/H05.” See *Applicant's February 21, 2006 Paper* at 8.

With respect to the aforementioned assertion by the Examiner, the Applicant has provided evidence that the specification includes ample scientific and explanatory language to identify the product associated with “HPC/H02” and “HPC/H05” marks, or comparable products, such that one of ordinary skill having the benefit of the disclosure could practice the claimed invention without undue experimentation. See *Applicant’s February 21, 2006 Paper* at 8-9; see also, e.g., *Specification* at 8 and 17. However, and as discussed in greater detail at VII.A.1 above, the Examiner has simply failed to advance any evidence whatsoever to the contrary. Instead, the Examiner has concluded, without analysis or discussion of any kind, that the claims are not enabled. *Final Office Action* at 3.

Inasmuch as the Examiner has failed to provide any evidence or analysis whatsoever in support of the allegation that the scientific and explanatory language of the specification with respect to the claimed coating is inadequate to enable one of ordinary skill in the art to practice the invention without undue experimentation, Applicant respectfully submits that the rejection of claims 1-36 under 35 U.S.C. § 112, first paragraph, lacks an adequate basis and should accordingly be overruled by the Board.

3. The Examiner has failed to establish that any pending claim is based on identification of a product merely by trademark or trade name.

Finally, the Examiner has alleged, with respect to the rejection of claims 1-36 under 35 U.S.C. 112, first paragraph, that:

“The claimed emissive coating which substantially comprising an inorganically bonded ceramic was not described sufficiently in the specification to enable one skilled in the art to make and use the invention.”

Final Office Action at 3 (*emphasis added*).

In support of this allegation, the Examiner appears to rely upon M.P.E.P. 608.01(v) [R-2]. Particularly, the Examiner has asserted that “If proper identification of the product sold under a trademark, or a product referred to only by a name used in trade, is omitted from the specification and such identification is deemed necessary under the principles set forth above, the examiner should hold the disclosure insufficient and reject on the ground of insufficient disclosure any claims based on the identification of the product merely by trademark or by the

name used in trade. See M.P.E.P. 608.01(v) [R-2].” *Emphasis added*. The plain language of this assertion makes clear that the reliance of the Examiner on M.P.E.P. 608.01(v) [R-2] is misplaced.

At the outset, Applicant submits that, notwithstanding the allegations of the Examiner, a proper identification of the claimed coating has been made in the specification, as discussed at VII.A.2 above. Correspondingly, it is clear that, contrary to the assertion of the Examiner, none of the rejected claims are based on a product identified merely by trademark or tradename.

With regard to the latter point, it appears that the cited passage of the M.P.E.P. applies in only a limited set of circumstances, namely, those instances where pending claims are “... based on the identification of the product *merely* by trademark or by the name used in trade.” *Emphasis added*. It is clear however that such circumstances are not present in this case.

Particularly, the Examiner has failed to identify any claims that are based on identification of the product [emissive coating] merely by trademark or trade name. That is, it is clear from the specification that the disclosure with respect to the claimed coating is not limited to “... identification of the product merely by trademark or trade name” (*emphasis added*). Rather, as noted elsewhere herein and in Applicant’s February 21, 2006 Paper, the specification includes numerous particular references to a wide variety of attributes of exemplary high emissivity coatings. See, e.g., *Applicant’s February 21, 2006 Paper* at 9-10.

Inasmuch as the claimed coating is not, contrary to the assertion of the Examiner, referred to in the specification merely by trademark or trade name, the reliance of the examiner on M.P.E.P. 608.01(v) [R-2] as a basis for the rejection is misplaced. In light of the foregoing, the Applicant respectfully submits that the rejection should be overruled by the Board.

B. Issue 2: Whether claims 1-2, 4-15 and 17-19 are unpatentable under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 3,400,882 to *McManus*

The Examiner has failed to establish that *McManus* discloses the identical invention in as complete detail as is contained in the claims.

It is well established that a claim is anticipated under 35 U.S.C. § 102(a), (b), or (e) only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. Further, the identical invention must be shown in as complete detail as is contained in the claim. Finally, the elements must be arranged as required by the claim. *Manual of Patent Examining Procedure ("MPEP") § 2131.*

As noted in Applicant's Pre-Appeal Brief Request for Review, the Examiner has rejected claims 1-2, 4-15 and 17-19 as being anticipated by *McManus*. However, Applicant disagrees for at least the reasons set forth in Applicant's February 21, 2006 Paper at 11-14.

Particularly, Applicant's February 21, 2006 Paper notes that the rejected claims recite "a coating substantially comprising an inorganically bonded ceramic." In contrast, the portion of *McManus* relied on by the Examiner refers only to a "vacuum chamber comprising a coating of ceramic material ... which may be any suitable ceramic ..." *Col. 3, lines 60-75*. Thus, the portion of *McManus* relied upon by the Examiner clearly fails to disclose the "inorganically bonded" ceramic recited in the claims.

Notwithstanding such failure, the Examiner has asserted that Hawley's Condensed Chemical Dictionary, 13th Edition, p. 231 ("*Hawley's*") defines a ceramic as "a product, in which silicon and its oxide and complex compound known as silicates occupy a predominant position." The Examiner goes on to extrapolate, without citing any supporting references or data, that "since ceramic comprises inorganic materials, ceramic is considered to be inorganically bonded ceramic." *Emphasis added.* As characterized by the Examiner then, all silicon, silicon oxides and silicates are inorganic. Again however, the Examiner has provided no support for this characterization. The Examiner then uses these unsupported assertions as a basis for concluding that the "ceramic" coating referred to in *McManus* necessarily constitutes "inorganically bonded ceramic" such as is recited in the rejected claims.

As noted in Applicant's February 21, 2006 Paper at 13-14 however, this conclusion is not supported by *Hawley's*. For example, and contrary to the assertion of the Examiner, it is well established that organic silicates exist. See *Id.* Applying the *Hawley's* definition then, "ceramic" would seem to embrace not only inorganic ceramics, but also organic ceramics such as an organic silicate for example.

For at least the foregoing reasons, Applicant submits that there is no basis for the narrow construction advanced by the Examiner with respect to the term "ceramic." At least insofar as the Examiner has failed to establish that *Hawley's* teaches that all ceramics are inorganic, *Hawley's* fails to provide support for the rejection advanced by the Examiner. That is, the mere possibility that *Hawley's* discloses inorganic ceramics is inadequate to support the assertion of the Examiner that all ceramics, including those referred to in *McManus*, are necessarily inorganic.

In light of the foregoing, Applicant respectfully submits that the Examiner has failed to establish that *McManus*, considered in connection with *Hawley's*, discloses the identical invention in as complete detail as is contained in the claims. See *MPEP* § 2131.

In recognition of the aforementioned defects in the 35 U.S.C. 102(b) rejections made by the Examiner based on *McManus*, Applicant traversed the rejection of the Examiner in Applicant's February 21, 2006 Paper. However, in the Final Office Action, the Examiner failed to address the arguments set forth in Applicant's February 21, 2006 Paper and, instead, simply repeated the earlier rejection. Applicant submits that such an approach to examination is clearly inconsistent with established examination guidelines. Particularly, Applicant notes that "[w]here the applicant traverses any rejection, the examiner should, if he or she repeats the rejection, *take note of the applicant's argument and answer the substance of it.*" *M.P.E.P.* § 707.07(f). *Emphasis added.*

Finally, Applicant noted in the aforementioned traversal that the 35 U.S.C. 102(b) rejections made by the Examiner based on *McManus* appeared to be based at least in part on the personal knowledge of the Examiner and Applicant accordingly requested an affidavit pursuant to 37 C.F.R. 1.104(d)(2). See *Applicant's February 21, 2006 Paper* at 14. However, the Examiner failed to provide the requested affidavit.

For at least the reasons set forth above, Applicant respectfully submits that the Examiner has failed to establish that *McManus*, either alone or considered in connection with *Hawley's* or

any other reference, anticipates claims 1-2, 4-15 and 17-19 under 35 U.S.C. § 102(b), and the rejection of those claims should accordingly be overruled by the Board.

C. **Issue 3: Whether claims 1-2 and 4-10 are unpatentable under 35 U.S.C. §102(b) as being anticipated by *Bliesner***

The Examiner has failed to establish that *Bliesner* discloses the identical invention in as complete detail as is contained in the claims.

As noted in Applicant's Pre-Appeal Brief Request for Review, the Examiner has rejected claims 1-2 and 4-10 as being anticipated by *Bliesner*. However, Applicant disagrees for at least the reasons set forth in Applicant's February 21, 2006 Paper at 11-14.

Particularly, Applicant's February 21, 2006 Paper notes that the rejected claims recite "a coating substantially comprising an inorganically bonded ceramic." In contrast, the portion of *Bliesner* relied on by the Examiner refers only to an "electrically insulating ceramic ..." (col. 3, line 12). Thus, the portion of *Bliesner* relied upon by the Examiner clearly fails to disclose the "inorganically bonded" ceramic recited in the claims.

As to the reliance of the Examiner on *Hawley's* in the rejection of claims 1-2 and 4-10, Applicant notes that the discussion set forth at VII.B. above is germane as well to the rejection of claims 1-2 and 4-10 based on *Bliesner* and Applicant respectfully directs the attention of the Board to such discussion and conclusions.

In light of the foregoing, Applicant respectfully submits that the Examiner has failed to establish that *Bliesner*, considered in connection with *Hawley's*, discloses the identical invention in as complete detail as is contained in the claims. See *MPEP* § 2131.

In recognition of the aforementioned defects in the 35 U.S.C. 102(b) rejections made by the Examiner based on *Bliesner*, Applicant traversed the rejection of the Examiner in Applicant's February 21, 2006 Paper. However, in the Final Office Action, the Examiner failed to address the arguments set forth by Applicant in Applicant's February 21, 2006 Paper and, instead, simply repeated the earlier rejection. Applicant submits that such an approach to examination is clearly inconsistent with established examination guidelines. Particularly, Applicant notes that "[w]here the applicant traverses any rejection, the examiner should, if he or she repeats the rejection, *take note of the applicant's argument and answer the substance of it.*" *M.P.E.P.* § 707.07(f). *Emphasis added.*

Finally, Applicant noted in the aforementioned traversal that the 35 U.S.C. 102(b) rejections made by the Examiner based on *Bliesner* appeared to be based at least in part on the

personal knowledge of the Examiner and Applicant accordingly requested an affidavit pursuant to 37 C.F.R. 1.104(d)(2). See *Applicant's February 21, 2006 Paper* at 14. However, the Examiner failed to provide the requested affidavit.

For at least the reasons set forth above, Applicant respectfully submits that the Examiner has failed to establish that *Bliesner*, either alone or considered in connection with *Hawley's* or any other reference, anticipates claims 1-2 and 4-10 under 35 U.S.C. § 102(b), and the rejection of those claims should accordingly be overruled by the Board.

D. Issue 4: Whether claims 1-2, 4-15 and 17-19 are unpatentable, under 35 U.S.C. §103(a), over *McManus*.

The Examiner has failed to establish a *prima facie* case of obviousness with respect to claims 1-2, 4-15 and 17-19 based upon *McManus*.

It is well settled that in order to establish a *prima facie* case of obviousness, it is the burden of the Examiner to demonstrate that three criteria are met: first, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings; second, there must be a reasonable expectation of success; and third, the prior art reference (or references when combined) must teach or suggest all the claim limitations. See M.P.E.P. § 2143. As discussed below however, the Examiner has failed to establish a *prima facie* case of obviousness with respect to claims 1-2, 4-15 and 17-19.

As noted at VII.C. above, as well as in Applicant's February 21, 2006 Paper at 14, the Examiner has failed to establish that *McManus* teaches, or even suggests, the claimed "inorganically bonded ceramic." Moreover, the Examiner has failed to establish that this defect in *McManus* is remedied by *Hawley's* or any other reference(s). The rejection made by the Examiner is problematic for other reasons as well.

Particularly, the Examiner has failed to even state what the purportedly obvious combination or modification is believed by the Examiner to constitute, much less establish the existence of a suggestion or motivation to make such a combination. By way of example, the Examiner has failed to state how the *McManus* coating should be modified so as to arrive at the claimed invention. See, e.g., *Office Action mailed February 4, 2005* at 4-6. Nor has the Examiner established that there is a likelihood that the contemplated combination, whatever it may be, would be successful.

In light of the foregoing, Applicant submits that the Examiner has failed to establish a *prima facie* case of obviousness with respect to claims 1-2, 4-15 and 17-19, at least because the Examiner has failed to establish that, whatever the purportedly obvious combination is believed by the Examiner to constitute, such combination includes all the limitations of the claims, because the Examiner has failed to establish the existence of a suggestion or motivation to make modify the *McManus* coating, and because it is not at all clear that modification of the *McManus*

coating would be successful in any event. Applicant thus respectfully submits that the rejection of claims 1-2, 4-15 and 17-19 should be overruled by the Board.

E. Issue 5: Whether claims 1-2 and 4-10 are unpatentable, under 35 U.S.C. §103(a), over *Bliesner*.

The Examiner has failed to establish a *prima facie* case of obviousness with respect to claims 1-2 and 4-10 based upon *Bliesner*.

As noted at VII.D. above, as well as in *Applicant's February 21, 2006 Paper* (p. 14), the Examiner has failed to establish that *Bliesner* teaches, or even suggests, the claimed "inorganically bonded ceramic." Moreover, the Examiner has failed to establish that this defect in *Bliesner* is remedied by any other reference(s). As in the case of the obviousness rejection based on *McMamus*, discussed above, the rejection made by the Examiner based on *Bliesner* is problematic for other reasons as well.

Particularly, the Examiner has failed to even state what the purportedly obvious combination or modification is believed by the Examiner to constitute, much less establish the existence of a suggestion or motivation to make such a combination. By way of example, the Examiner has failed to state how the *Bliesner* coating should be modified so as to arrive at the claimed invention. See, e.g., *Office Action mailed February 4, 2005* at 4-6. Nor has the Examiner established that there is a likelihood that the contemplated combination, whatever it may be, would be successful.

In light of the foregoing, Applicant submits that the Examiner has failed to establish a *prima facie* case of obviousness with respect to claims 1-2 and 4-10, at least because the Examiner has failed to establish that, whatever the purportedly obvious combination or modification is believed by the Examiner to be, such combination includes all the limitations of the claims, because the Examiner has failed to establish the existence of a suggestion or motivation to make such combination, and because it is not at all clear that modification of the *Bliesner* coating would be successful in any event. Applicant thus respectfully submits that the rejection of claims 1-2 and 4-10 should be overruled by the Board.

- F. **Issue 6:** Whether claims 3, 16 and 20-26 are unpatentable, under 35 U.S.C. §103(a), over *McManus* as applied to claims 1-2, 4-15 and 17-19, and further in view of U.S. Patent No. 5,725,808 to Tormey et al. (hereinafter “*Tormey*”).

The Examiner has failed to establish a *prima facie* case of obviousness with respect to claims 3, 16 and 20-26 based upon *McManus* and *Tormey*.

Each of the rejected claims 3, 16 and 20-26 recites, or includes by virtue of dependence from another claim, an “emissive coating substantially comprising an inorganically bonded ceramic ...” However, as pointed out in *Applicant’s February 21, 2006 Paper* at 14, the Examiner has failed to establish that *McManus* or any other cited reference teaches, or even suggests, the claimed “inorganically bonded ceramic.” In addition, the Examiner has failed to establish that this defect in *McManus* is remedied by *Tormey* or any other reference(s). Thus, even if *McManus* and *Tormey* are combined in the purportedly obvious fashion, the resulting combinations nonetheless fail to include all the limitations of the rejected claims.

As to the purported motivation to combine the alleged teachings of *McManus* and *Tormey*, the Examiner has asserted that one of ordinary skill would be motivated to make the purportedly obvious combination “... in order to improve the properties of the ceramic coating [of *McManus*] such as reduced shrinkage and have a low firing temperature.” *Office Action mailed February 4, 2005* at 7. *Emphasis added.*

Applicant notes however that “improve[d] properties,” “reduced shrinkage” and “low firing temperature” (*emphasis added*) are relative terms whose definitions are known only to the Examiner. For example, it is not apparent what reference point(s) the Examiner is using as a basis to assert that such *improvements* and *reductions* would be achieved as a result of the implementation of the purportedly obvious combination. Nor is it apparent how the Examiner derived those reference point(s), if such exist.

Further, the Examiner has failed to establish that the *McManus* coating suffers from such shortcomings as could, or would, be remedied by use of the purported disclosure of *Tormey*. In the absence of any evidence that the *McManus* coating is somehow deficient in terms of its shrinkage and firing temperature characteristics, if any, Applicant submits that the Examiner has failed to establish the existence of the requisite motivation to make the purportedly obvious combination.

Finally, the Examiner has not established that there is a likelihood that the allegedly obvious combination would prove to be successful. That is, the Examiner has not established that inclusion of oxide filler, purportedly disclosed in *Tormey*, in the *McMamus* coating would be successful or would produce the purported benefits identified by the Examiner.

In light of the foregoing, Applicant submits that the Examiner has failed to establish a *prima facie* case of obviousness with respect to claims 3, 16 and 20-26, at least because the Examiner has failed to establish that the purportedly obvious combination includes all the limitations of the claims, because the Examiner has failed to establish the existence of a suggestion or motivation to make such combination, and because it is not at all clear that the purportedly obvious modification of the *McMamus* coating would be successful. Applicant thus respectfully submits that the rejection of claims 3, 16 and 20-26 should be overruled by the Board.

G. Issue 7: Whether claim 3 is unpatentable, under 35 U.S.C. §103(a), over *Bliesner* as applied to claims 1-2, and further in view of *Tormey*.

The Examiner has failed to establish a *prima facie* case of obviousness with respect to claim 3 based upon *Bliesner* and *Tormey*.

Rejected claim 3 includes, by virtue of its dependence from claim 1, an “emissive coating substantially comprising an inorganically bonded ceramic ...” However, as pointed out in *Applicant’s February 21, 2006 Paper* at 14, the Examiner has failed to establish that *Bliesner* or any other cited reference teaches, or even suggests, the claimed “inorganically bonded ceramic.” In addition, the Examiner has failed to establish that this defect in *Bliesner* is remedied by *Tormey* or any other reference(s). Thus, even if *Bliesner* and *Tormey* are combined in the purportedly obvious fashion, the resulting combinations nonetheless fail to include all the limitations of the rejected claims.

As to the purported motivation to combine the alleged teachings of *Bliesner* and *Tormey*, the Examiner has asserted that one of ordinary skill would be motivated to make the purportedly obvious combination “... in order to improve the properties of the ceramic coating [of *Bliesner*] such as reduced shrinkage and have a low firing temperature.” *Office Action mailed February 4, 2005* at 7. *Emphasis added.*

Applicant notes however that “improve[d] properties,” “reduced shrinkage” and “low firing temperature” (*emphasis added*) are relative terms whose definitions are known only to the Examiner. For example, it is not apparent what reference point(s) the Examiner is using as a basis to assert that such *improvements* and *reductions* would be achieved as a result of the implementation of the purportedly obvious combination. Nor is it apparent how the Examiner derived those reference point(s), if such exist.

Further, the Examiner has failed to establish that the *Bliesner* coating suffers from such shortcomings as could, or would, be remedied by use of the purported disclosure of *Tormey*. In the absence of any evidence that the *Bliesner* coating is somehow deficient in terms of its shrinkage and firing temperature characteristics, if any, Applicant submits that the Examiner has failed to establish the existence of the requisite motivation to make the purportedly obvious combination.

Finally, the Examiner has not established that there is a likelihood that the allegedly obvious combination would prove to be successful. That is, the Examiner has not established that inclusion of oxide filler, purportedly disclosed in *Tormey*, in the *Bliesner* coating would be successful or would produce the purported benefits identified by the Examiner.

In light of the foregoing, Applicant submits that the Examiner has failed to establish a *prima facie* case of obviousness with respect to claim 3, at least because the Examiner has failed to establish that the purportedly obvious combination includes all the limitations of the claims, because the Examiner has failed to establish the existence of a suggestion or motivation to make such combination, and because it is not at all clear that the purportedly obvious modification of the *Bliesner* coating would be successful. Applicant thus respectfully submits that the rejection of claim 3 should be overruled by the Board.

CONCLUSIONS

Based on the foregoing, Appellant respectfully submits that the rejections of the claims are not well taken. Accordingly, Appellant respectfully requests that the Board reverse the Examiner's rejections of claims 1-36 pending in this application and thereby place this application in condition for immediate allowance.

DATED this the 6th day of November, 2006.

Respectfully submitted,

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VIII. APPENDIX

A. CLAIMS ON APPEAL

1. **(Original)** A component suitable for use in an x-ray device, the component comprising:
 a body substantially comprised of metal; and
 an emissive coating disposed on at least a portion of the body, the coating substantially comprising an inorganically bonded ceramic.
2. **(Original)** The component as recited in claim 1, wherein the body substantially comprises stainless steel.
3. **(Original)** The component as recited in claim 1, wherein the emissive coating includes an oxide filler.
4. **(Original)** The component as recited in claim 1, wherein the emissive coating is dielectric.
5. **(Original)** The component as recited in claim 1, wherein when the emissive coating is in an uncured state, the emissive coating is substantially free of volatile organic compound emissions.
6. **(Original)** The component as recited in claim 1, wherein when the emissive coating is in an uncured state, the emissive coating takes the form of a slurry suitable for application to the component by spraying.
7. **(Original)** The component as recited in claim 1, wherein when the emissive coating has an emissivity of about 0.6 or higher.

8. **(Original)** The component as recited in claim 1, wherein when the emissive coating has an emissivity of about 0.2 or lower.

9. **(Original)** The component as recited in claim 1, wherein the emissive coating substantially prevents oxidation of the coated portion of the body at body temperatures of up to about 1450 degrees F.

10. **(Original)** The component as recited in claim 1, wherein the emissive coating substantially prevents corrosion of the coated portion of the body at body temperatures of up to about 1450 degrees F.

11. **(Original)** A vacuum enclosure for use in an x-ray device, the vacuum enclosure comprising:

 a metal body defining an inner surface and an outer surface; and

 an emissive coating disposed on a portion of at least one of the surfaces defined by the metal body, the emissive coating substantially comprising an inorganically bonded ceramic.

12. **(Original)** The vacuum enclosure as recited in claim 11, wherein the metal body substantially comprises stainless steel.

13. **(Original)** The vacuum enclosure as recited in claim 11, wherein the emissive coating is disposed on a substantial portion of the inner surface of the metal body.

14. **(Original)** The vacuum enclosure as recited in claim 11, wherein the metal body is configured for use with a rotating anode.

15. **(Original)** The vacuum enclosure as recited in claim 11, wherein the metal body is configured for use with a stationary anode.

16. **(Original)** The vacuum enclosure as recited in claim 11, wherein the emissive coating includes an oxide filler.

17. **(Original)** The vacuum enclosure as recited in claim 11, wherein the emissive coating is dielectric.

18. **(Original)** The vacuum enclosure as recited in claim 11, wherein the emissive coating substantially prevents oxidation of the coated portion of the body at body temperatures of up to about 1450 degrees F.

19. **(Original)** The vacuum enclosure as recited in claim 11, wherein the emissive coating substantially prevents corrosion of the coated portion of the body at body temperatures of up to about 1450 degrees F.

20. **(Original)** A vacuum enclosure for use in an x-ray device, the vacuum enclosure comprising:

a stainless steel body defining an inner surface and an outer surface; and
an emissive coating disposed on at least a portion of the inner surface defined by the stainless steel body, the emissive coating substantially comprising an inorganically bonded ceramic having an oxide filler.

21. **(Original)** The vacuum enclosure as recited in claim 20, wherein when the emissive coating is in an uncured state, the emissive coating is substantially free of volatile organic compound emissions.

22. **(Original)** The vacuum enclosure as recited in claim 20, wherein when the emissive coating is in an uncured state, the emissive coating takes the form of a slurry suitable for application to the vacuum enclosure by spraying.

23. **(Original)** The vacuum enclosure as recited in claim 20, wherein when the emissive coating has an emissivity of about 0.6 or higher.

24. **(Original)** The vacuum enclosure as recited in claim 20, wherein the emissive coating substantially prevents oxidation of the coated portion of the vacuum enclosure at vacuum enclosure temperatures of up to about 1450 degrees F.

25. **(Original)** The vacuum enclosure as recited in claim 20, wherein the emissive coating substantially prevents corrosion of the coated portion of the vacuum enclosure at vacuum enclosure temperatures of up to about 1450 degrees F.

26. **(Original)** The vacuum enclosure as recited in claim 20, wherein the emissive coating takes the form of a porous free ceramic composite.

27. **(Original)** A vacuum enclosure for use in an x-ray device, the vacuum enclosure comprising:

a first portion substantially comprised of metal, and a first emissive coating disposed on the first portion, the first coating substantially comprising an inorganically bonded ceramic having a first degree of emissivity; and

a second portion attached to the first portion and substantially comprised of metal, a second emissive coating disposed on the second portion, the second coating substantially comprising an inorganically bonded ceramic having a second degree of emissivity that is less than the first degree of emissivity.

28. **(Original)** The vacuum enclosure as recited in claim 27, wherein when the first and second emissive coatings are in an uncured state, the emissive coatings are substantially free of volatile organic compound emissions.

29. **(Original)** The vacuum enclosure as recited in claim 27, wherein when the first and second emissive coatings are in an uncured state, the emissive coatings take the form of a slurry suitable for application to the first and second components of the vacuum enclosure by spraying.

30. **(Original)** The vacuum enclosure as recited in claim 27, wherein the first emissive coating has an emissivity of about 0.6 or higher.

31. **(Original)** The vacuum enclosure as recited in claim 27, wherein the second emissive coating has an emissivity of about 0.2 or lower.

32. **(Original)** The vacuum enclosure as recited in claim 27, wherein the first and second emissive coatings substantially prevent oxidation of the first and second coated components of the vacuum enclosure at vacuum enclosure temperatures of up to about 1450 degrees F.

33. **(Original)** The vacuum enclosure as recited in claim 27, wherein the first and second emissive coatings substantially prevent corrosion of the first and second coated components of the vacuum enclosure at vacuum enclosure temperatures of up to about 1450 degrees F.

34. **(Original)** The vacuum enclosure as recited in claim 27, wherein the first and second emissive coatings take the form of porous free ceramic composites.

35. **(Original)** The vacuum enclosure as recited in claim 27, wherein the first portion of the vacuum enclosure comprises part of an exterior surface of the vacuum enclosure.

36. **(Original)** The vacuum enclosure as recited in claim 27, wherein the second portion of the vacuum enclosure comprises part of an interior surface of the vacuum enclosure.